AP50Q1C Series
AP55Q1C Series
AP55Q1D Series

Air Conditioner
user & installation manual

imagine the possibilities

Thank you for purchasing this Samsung product.
To receive more complete service, please register your product at

www.samsung.com/register

SAMSUNG

ⒺⒶ DB98-32202A(3)

Safety Precautions

The following safety precautions must be taken when using your air conditioner.

WARNING • Risk of electric shock can cause injury or death. • Disconnect all remote electric power supplies before servicing, installing or cleaning. • This must be done by the manufacturer or its service agent or a similar qualified person in order to avoid a hazard.

During operation

- Users of this product are cautioned not to attempt repair of this product at their own discretion. Instead, they are requested to directly contact a designated service center or the outlet at which the product was purchased.
- Never spill any kind of liquid into the unit. Should this happen, unplug or main switch off the unit and contact an authorized service center.
- Do not insert anything between the air outlet blades because the inner fan may be damaged and could cause injury. Keep children away from the unit.
- Do not place any obstacles in front of the unit.
- Do not spray liquid of any kind into the indoor unit. Should this happen, switch off the breaker used for your air conditioner and contact your installation specialist.
- Make sure that the unit is correctly ventilated at all times: Do not place clothing or other materials over it.
- If the wireless remote control will not be used for a long time, remove the batteries. (If applicable)
- When using a wireless remote control, the distance should not be more than 7 m from the air conditioner. (If applicable)

Disposing of the unit

- Before throwing out the device, it is necessary to pull back the battery cells and get rid of them safely for recycling reasons.
- When you need to dispose of the unit, consult your dealer. If pipes are removed incorrectly, refrigerant may blow out and come into contact with your skin, causing injury. Releasing refrigerant into the atmosphere also damages the environments.
- Please recycle or dispose of the packaging material for this product in an environmentally responsible manner.

Others

- Never store or ship the air conditioner upside down or sideways to avoid damage to the compressor.
- The appliance is not intended for use by young children or infirm persons without supervision: Young children should be supervised to ensure that they do not play with the appliance.
- Max current is measured according to IEC standard for safety and current is measured according to ISO standard for energy efficiency.

Contents

◆ **PREPARING YOUR AIR CONDITIONER**
- Safety Precautions 2
- View of the Unit 4
- Remote Control-Buttons 5
- Inserting the Remote Control Batteries 5
- Getting Started 6
- Operating Preparation 6

◆ **OPERATING YOUR AIR CONDITIONER**
- Cooling Your Room 7
- Heating Your Room 8
- Selecting the Automatic Operating Mode 9
- Changing the Room Temperature Quickly 10
- Operating to the Long Distance 11
- Removing Excess Humidity 12
- Airing Your Room 13
- Adjusting the Air Flow Direction Vertically 14
- Adjusting the Air Flow Direction Horizontally 14

◆ **PROGRAMMING YOUR AIR CONDITIONER**
- Setting the Off Timer 15
- Other Function 16

◆ **RECOMMENDATIONS FOR USE**
- Operating Recommendations 16
- Temperature and Humidity Ranges 17
- Cleaning Your Air Conditioner 18
- Solving Common Problems 19

◆ **TECHNICAL SPECIFICATIONS**
- Technical Specifications 20

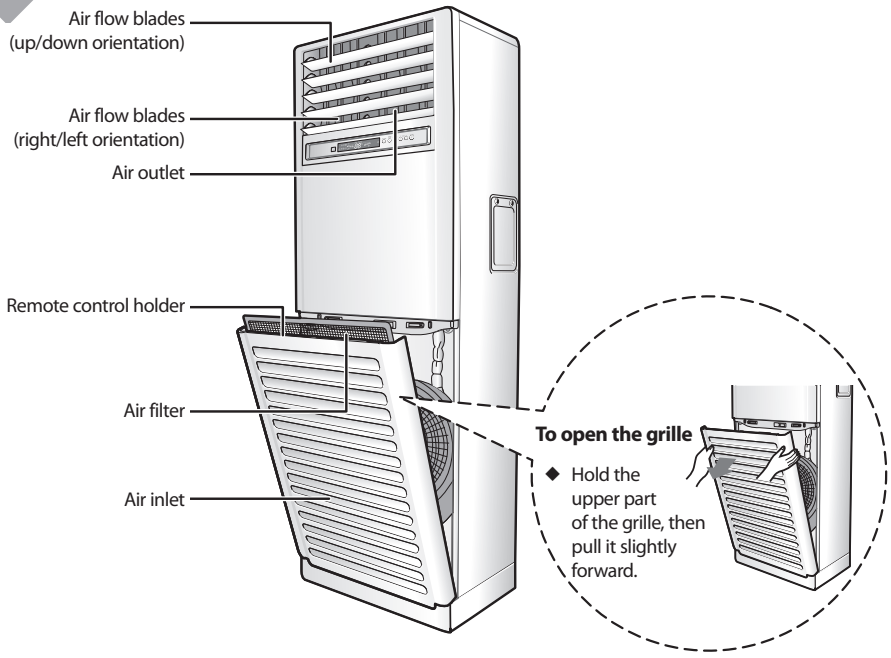
◆ **INSTALLATION PART**
- Accessory Parts List 21
- Selection of Installation Place 22
- Electrical Work 23
- Installation Procedures 26
- Connection of Refrigerant Piping 27
- Drilling a Hole in the Wall 28
- Drain Hose 28
- Connecting the Pipe 28
- Air Purge 29
- Refrigerant Charging 30
- Check and Test Operation 31

◆ **PACKING AND UNPACKING GUIDE**
- Packing and Unpacking Guide 33

◆ **HOW TO CONNECT YOUR EXTENDED POWER CABLES** 35

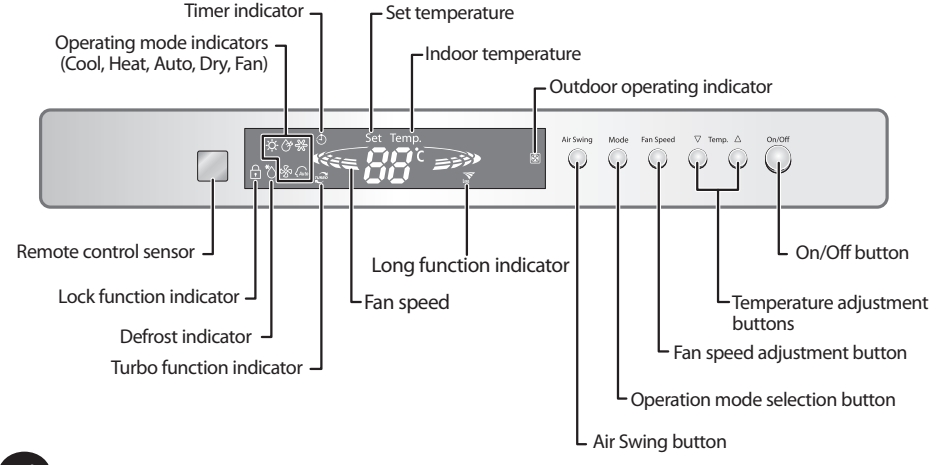
View of the Unit

Indoor Unit



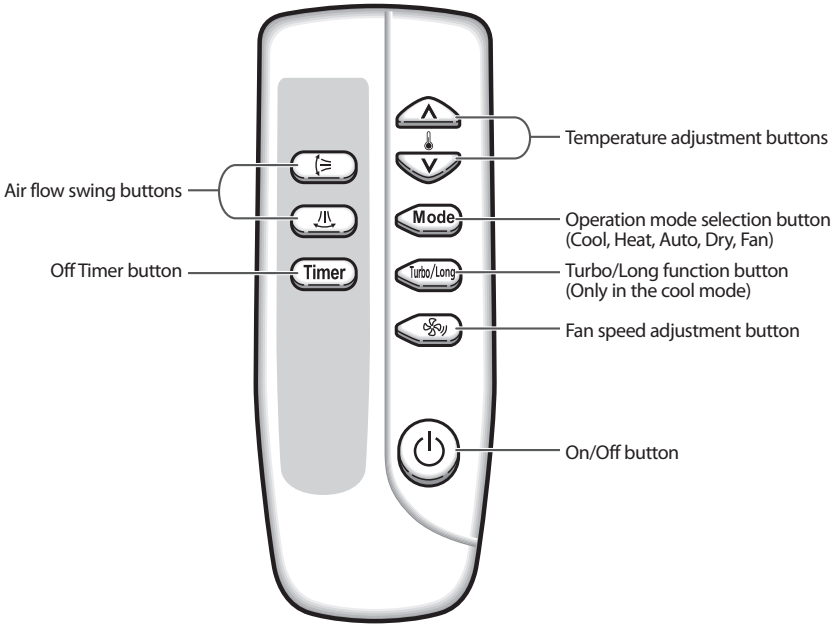
Control Panel

You can operate the air conditioner with the control panel when you do not wish to or cannot operate the air conditioner with the remote control.
Using the control panel, you can adapt the On/Off, temperature, fan speed, operation mode and air swing setting to your specific requirements.



Remote Control-Buttons

All air conditioner features except Lock function can be controlled from your seat by using the remote control. You must operate the Turbo, Long function and Off Timer with the remote control.



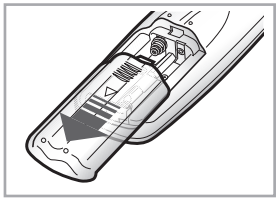
Inserting the Remote Control Batteries

You must insert or replace the remote control batteries when :

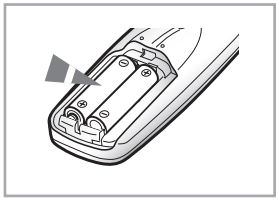
- ***You purchase the air conditioner***
- ***The remote control does not work correctly***

Note

- Use two AAA, LR03 1.5V batteries.
- Do not use old batteries or different kinds of batteries together.
- Batteries may be completely discharged after 12 months, even if they have not actually been used.



1 Push the battery cover on the rear of the remote control with your thumb in the direction of the arrow and remove it.



2 Insert the two batteries, taking care to respect the polarities :

- + on the batt ery with + on the remote control.
- - on the battery with - on the remote control.

3 Close the cover by sliding it back until it clicks into place.

Getting Started

You have just purchased a floor stand type air conditioner and it has been installed by your installation specialist.

Your Manual contains valuable information on using your air conditioner. Please take the time to read it as it will help you take full advantage of the unit's features.

The booklet is organized as follows.

- ***The following figures are shown on pages from 4 to 5 :***
  - ***Indoor unit***
  - ***Remote control(buttons and display)***

They will help you find the buttons and understand the symbols displayed.

- ***In the manual, you will find a series of step-by-step procedures for each function available.***

The illustrations in the step-by-step procedures use three different symbols:

For the...	The illustrations are...
Remote control	In the upper part.
Unit itself	In the lower part.

Operating Preparation

Look around the indoor and outdoor units. Confirm if any obstacles that may prevent the air flow are present near the air conditioner.

Turn the power switch on.

IMPORTANT To operate the unit, the power switch is fitted to the wall and should be set to ON.

Cooling Your Room

You must select the Cool mode if you wish to adjust the :

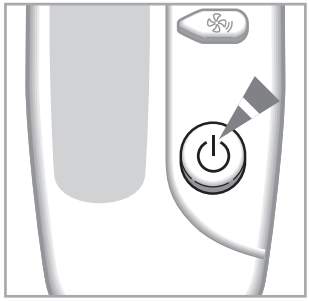
- ***Cooling temperature***
- ***Fan speed when cooling***

1 If necessary, press the (On/Off) button.

Result:
- The power indicator on the control panel comes on.
- The indoor unit beeps.

IMPORTANT The air conditioner is fitted with a protection mechanism to prevent the unit from being damaged when it is started immediately after being:
- Switched on
- Stopped

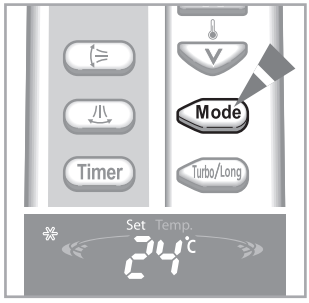
It will start up normally after three minutes.



2 If the is not displayed on the control panel, press the Mode button on the remote control one or more times until it appears.

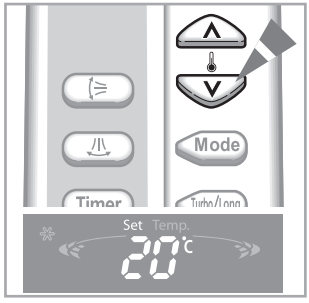
Result:
- The indoor unit beeps each time you press the Mode button.
- The air conditioner runs in the Cool mode.

Note You can change modes at any time.



3 To adjust the temperature, press the buttons on the remote control or ▽ Temp. △ buttons on the control panel one or more times until the required temperature is displayed. Possible temperatures are between 18°C and 30°C inclusive.

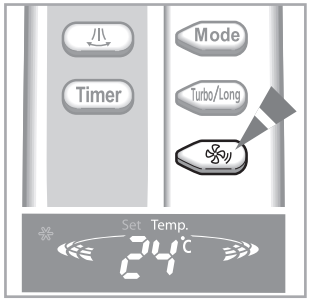
Result:
- Each time you press the buttons:
  - The temperature is adjusted by 1°C.
  - The indoor unit beeps.
- The air conditioner starts cooling, provided that the room temperature is higher than the selected temperature.
- If the room temperature reaches the set temperature, the air conditioner stops cooling, but the fan is still operating.



4 Select the fan speed by pressing the button on the remote control or Fan Speed button one or more times until the required setting is displayed :

- Automatic(rotated : → →)
- Low
- High
- Turbo

Result: Each time you press the button, the indoor unit beeps.

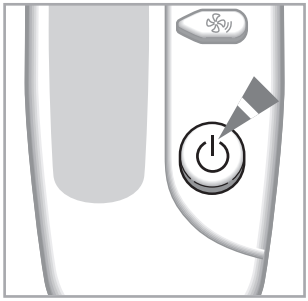


5 To control the direction of the air flow, refer to page 14.

Heating Your Room

You must select the Heat mode if you wish to adjust the :

- ***Heating temperature***
- ***Fan speed when heating***

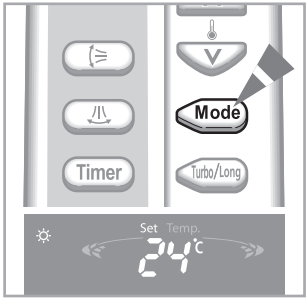


1 If necessary, press the (On/Off) button.

Result:
- The power indicator on the control panel comes on.
- The indoor unit beeps.

IMPORTANT The air conditioner is fitted with a protection mechanism to prevent the unit from being damaged when it is started immediately after being:
- Switched on
- Stopped

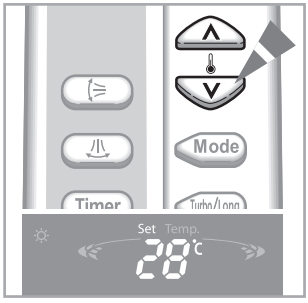
It will start up normally after three minutes.



2 If the ☼ is not displayed on the control panel, press the Mode button on the remote control one or more times until it appears.

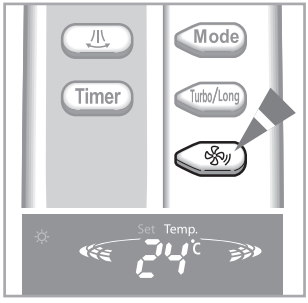
Result:
- The indoor unit beeps each time you press the Mode button.
- The air conditioner runs in the Heat mode.

Note You can change modes at any time.



3 To adjust the temperature, press the buttons on the remote control or ▽ Temp. △ buttons on the control panel one or more times until the required temperature is displayed. Possible temperatures are between 16°C and 30°C inclusive.

Result:
- Each time you press the buttons:
  - The temperature is adjusted by 1°C.
  - The indoor unit beeps.
- The air conditioner starts heating, provided that the room temperature is lower than the selected temperature.
- For the first 3~5 minutes, the fan may not operate to prevent the cool air from running out of the indoor unit.
- If the room temperature reachs the set temperature, the air conditioner stops heating, but the fan is still operating.
- The Defrost indicator(*) appears when frost forms on the outdoor unit and disappears automatically after removing frost.



4 Select the fan speed by pressing the button on the remote control or Fan Speed button one or more times until the required setting is displayed :

- Automatic(rotated : → →)
- Low
- High

Result: Each time you press the button, the indoor unit beeps.

5 To control the direction of the air flow, refer to page 14.

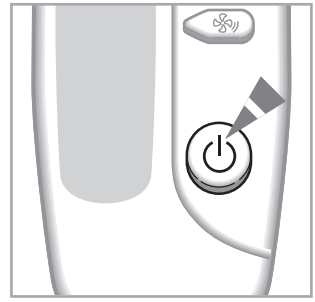
Note You can't control the airflow direction when the fan doesn't operate.

Selecting the Automatic Operating Mode

You can start the air conditioner in the Automatic mode.
In the Automatic mode, the temperature and the optimum fan speed is selected automatically.

1 If necessary, press the (On/Off) button.

Result:
- The power indicator on the control panel comes on.
- The indoor unit beeps.



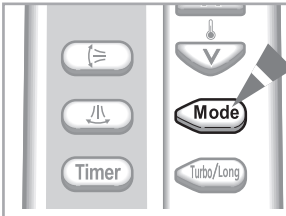
IMPORTANT The air conditioner is fitted with a protection mechanism to prevent the unit from being damaged when it is started immediately after being:
- Switched on
- Stopped

It will start up normally after three minutes.

2 If the Auto is not displayed on the control panel, press the Mode button on the remote control one or more times until it appears.

Result:
- The indoor unit beeps each time you press the Mode button.
- The air conditioner runs in the Auto mode.

Note
- You can change modes at any time.
- If the indoor temperature is higher than 21°C, the air conditioner operates in the Cool mode. If the indoor temperature is lower than 21°C, the air conditioner operates in the Heat mode.



◆ Cooling operation

◆ Heating operation

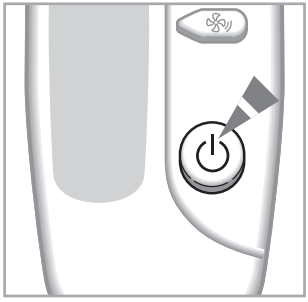
3 To control the direction of the air flow, refer to page 14.

Changing the Room Temperature Quickly

The Turbo function is used to Cool /Auto(cool) your room as quickly as possible.

Example : ***You have just come home and find that the room is very hot. You wish to cool it down as quickly as possible.***

The Turbo function operates for 30 minutes with the maximum setting before returning automatically to the mode and temperature previously selected.

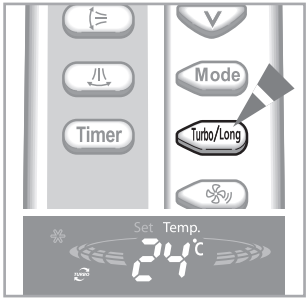


1 If necessary, press the (On/Off) button.

Result:
- The power indicator on the control panel comes on.
- The indoor unit beeps.

IMPORTANT The air conditioner is fitted with a protection mechanism to prevent the unit from being damaged when it is started immediately after being:
- Switched on
- Stopped

It will start up normally after three minutes.



2 Press the Turbo/Long button.

Result:
- The air conditioner cools the room as quickly as possible.
- The temperature and fan settings are adjusted automatically.
- After 30 minutes, the air conditioner is reset automatically to the previous mode, temperature and fan setting.

3 If you wish to stop the Turbo function before the end of 30-minute period, press the Turbo/Long button twice.

Result:
- The air conditioner is reset automatically to the previous mode, temperature and fan settings.
- You can't select the Turbo and Long function simultaneously.

4 To control the direction of the air flow, refer to page 14.

Operating to the Long Distance

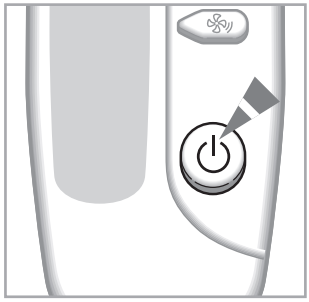
The Long function is used to Cool /Auto(cool) your room as far as possible. In the Long function, the up/down orientation of air flow and fan speed are selected automatically.

1 If necessary, press the (On/Off) button.

Result:
- The power indicator on the control panel comes on.
- The indoor unit beeps.

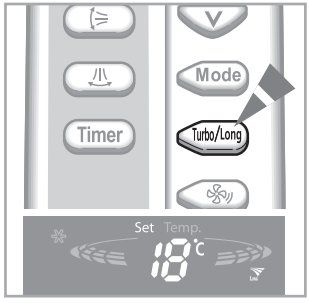
IMPORTANT The air conditioner is fitted with a protection mechanism to prevent the unit from being damaged when it is started immediately after being:
- Switched on
- Stopped

It will start up normally after three minutes.



2 Press the Turbo/Long button twice.

Result:
- The air conditioner cools the room as far as possible.
- The fan settings are adjusted automatically.

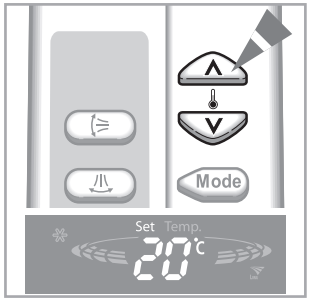


3 To adjust the temperature, press the buttons one or more times until the required temperature is displayed. Possible temperatures are between 18°C and 30°C inclusive.

Result:
- Each time you press the buttons:
  - The temperature is adjusted by 1°C.
  - The indoor unit beeps.

4 If you wish to stop the Long function, press the Turbo/Long button again.

Result:
- The air conditioner is reset automatically to the previous mode, temperature and fan settings.

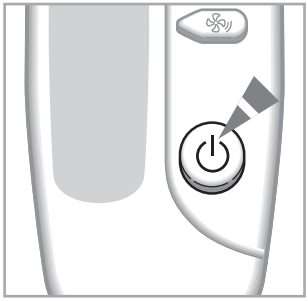


3 To control the direction of the air flow, refer to page 14.

Note You can't control the airflow direction horizontally in the Long function.

Removing Excess Humidity

If the atmosphere in your room is very humid or damp, you can remove excess humidity without lowering the room temperature too much.

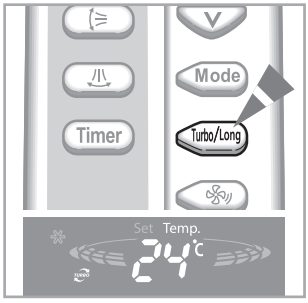


1 If necessary, press the (On/Off) button.

Result:
- The power indicator on the control panel comes on.
- The indoor unit beeps.

IMPORTANT The air conditioner is fitted with a protection mechanism to prevent the unit from being damaged when it is started immediately after being:
- Switched on
- Stopped

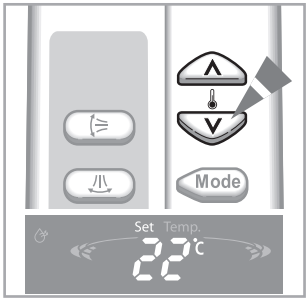
It will start up normally after three minutes.



2 If the is not displayed on the control panel, press the Mode button on the remote control one or more times until it appears.

Result:
- The indoor unit beeps each time you press the Mode button.
- The air conditioner runs in the Dry mode.

Note You can change modes at any time.



3 To adjust the temperature, press the buttons one or more times until the required temperature is displayed. Possible temperatures are between 18°C and 30°C inclusive.

Result:
- Each time you press the buttons:
  - The temperature is adjusted by 1°C.
  - The indoor unit beeps.
- The air conditioner starts removing the excess humidity;
  the quantity of air is adjusted automatically.

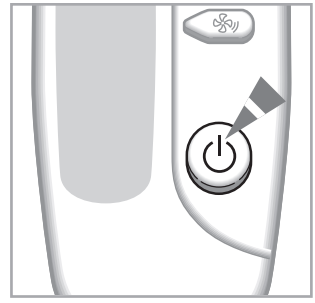
4 The fan speed is selected automatically(: Automatic).

5 To control the direction of the air flow, refer to page 14.

Airing Your Room

If the atmosphere in your room is stale, you can air the room using the Fan feature.

1 If necessary, press the (On/Off) button.

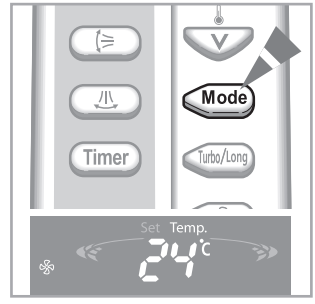


Result:
- The power indicator on the control panel comes on.
- The indoor unit beeps.

IMPORTANT The air conditioner is fitted with a protection mechanism to prevent the unit from being damaged when it is started immediately after being:
- Switched on
- Stopped

It will start up normally after three minutes.

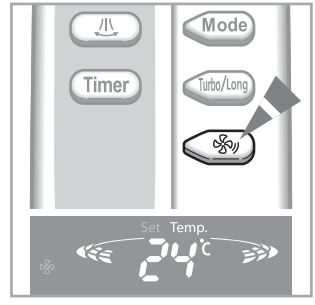
2 If the is not displayed on the control panel, press the Mode button on the remote control one or more times until it appears.



Result:
- The indoor unit beeps each time you press the Mode button.
- The air conditioner runs in the Fan mode.

Note You can change modes at any time.

3 Select the fan speed by pressing the button one or more times until the required setting is displayed:



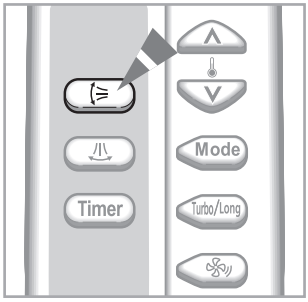
- Low
- High
- Turbo

Result: Each time you press the button, the indoor unit beeps.

4 To control the direction of the air flow, refer to page 14.

Adjusting the Air Flow Direction Vertically

Depending on the position of the indoor unit in your room, you can adjust the position of the outer air flow blade on the upper part of the unit, thus increasing the efficiency of the air conditioner.



1 Press the ( ) button.

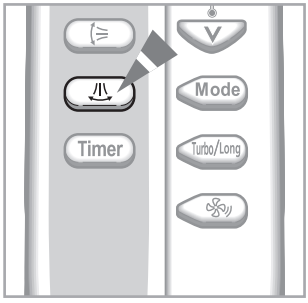
Result: The outer blade moves up and down.

RECOMMENDATION	When...	Adjust the blade to face...
	Cooling	Upwards.
	Heating	Downwards.

2 To stop the blade moving up and down, press the ( ) button again.

Adjusting the Air Flow Direction Horizontally

There are two sets of air flow blades. Just as the outer air flow blade can be adjusted vertically, the inner blade can be adjusted horizontally.



1 Press the ( ) button.

Result: The inner blade moves right and left.

2 To stop the blade moving right and left, press the ( ) button again.

Note
- ◆ You can't control the airflow direction horizontally in the Long Function.
- ◆ You can't control the airflow direction when the fan doesn't operate in the Heat mode.

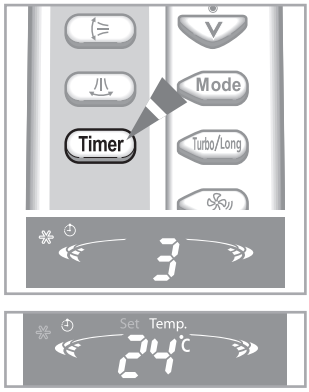
Setting the Off Timer

The Off Timer enables you to switch off the air conditioner automatically after a given period of time. You can set the period of time from 1 to 8 hours. You can select the Off Timer only when the air conditioner is on.

To set the operating time, press the (Timer) button one or more times until the required time is displayed. Possible time is between 1 hour and 8 hours inclusive.

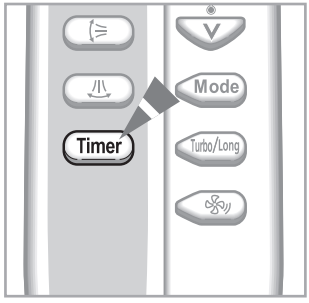
Result:
- ◆ After blinking of the timer indicator for 5 seconds, it will be changed to temperature setting.
- ◆ The air conditioner will switch off automatically after the set time and the Off Timer indicator disappears.

Note You can see or change the setting mode and/or the temperature by pressing the (Mode) button or the ▲/▼ buttons after setting the Off Timer.



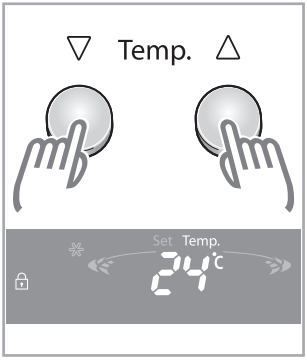
To Cancel the Off Timer

Press the (Timer) one or more times until the Off Timer indicator disappears.



Other Function

You can use the Lock function on the control panel of the indoor unit.



1 Press the ▽ Temp. △ buttons simultaneously for 3 seconds.

Result: ◆ 🔒 indicates on the control panel.
◆ The control panel is locked.

Note You can use the remote control even if the control panel is locked.

2 To cancel the Lock function, press the ▽ Temp. △ buttons simultaneously for 3 seconds once again.

Operating Recommendations

Here are a few recommendations that you should follow when using your air conditioner.

Topic	Recommendation
Heating performances	The heat pump inside the air conditioner absorbs heat from outside air and brings it indoors. If the temperature of the outside air drops, the air conditioner will heat less.
Warm air circulation	The air conditioner circulates warm air to heat your room; as a result, some time will be required after starting the air conditioner to warm the entire room. If necessary, set the air conditioner on before you wish to use the room.
Frost	When outside temperatures are low and humidity is high, frost may form in the outdoor unit when heating is selected. If this happens: ◆ The heating operation is stopped. ◆ The Defrost(*△) mode is triggered automatically for about 7 minutes. No intervention is required from you; after about 7 minutes, the air conditioner starts operating again normally.
High indoor and outdoor temperatures	If both the indoor and outdoor temperatures are high and you select the Heat mode, the outdoor unit's fan and compressor may stop at times. This is normal; simply wait until the air conditioner switches on again.
Power failure	If a power failure occurs when the air conditioner is operating, the unit is switched off. When the power returns, you must press the ⏻ (On/Off) button to restart it.

Temperature and Humidity Ranges

The following table indicates the temperature and humidity ranges, within which the air conditioner can be used.

If the air conditioner is used at...	Then...
High temperature	The automatic protection feature may be triggered and the air conditioner stopped.
Low temperature	A water leakage or some other malfunction may happen if the heat exchanger freezes.
High humidity levels	Water may condense on and drip from the surface of the indoor unit if it is used for a long periods.

Mode	Outdoor Temperature	Indoor Temperature	Indoor Humidity
Heating	0°C to 24°C approx.	27°C or less.	-
Cooling	21°C to 54°C approx.	18°C to 32°C approx.	80% or less
Drying	18°C to 54°C approx.	18°C to 32°C approx.	-

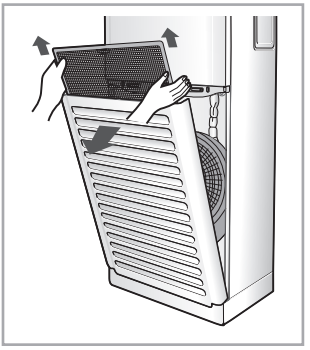
✳ ***If the outdoor temperature is as low as 0°C, the heating capacity drops up to 70~80% depending on the operation condition.***
If the cooling operation is used at over 33°C(indoor temperature), it does not cool at its full capacity.

Cleaning Your Air Conditioner

For the best use of your air conditioner, you must clean it every other week regularly to remove the dust that accumulates on the air filter.

IMPORTANT Before cleaning your air conditioner, ensure that you have switched off the breaker for the unit.

1 Open the front grille, then pull out the air filter.

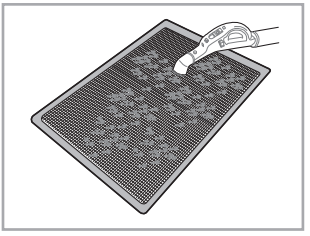


2 Remove all dust on the air filter with a vacuum cleaner or brush.

3 When you have finished, insert the air filter into the original position and close the front grille.

4 Clean the unit with a damp cloth and mild detergent (do NOT use benzene, solvents or other chemicals).

Note ***If you have not used the air conditioner for a long period of time, set the fan going for 3 to 4 hours to dry the inside of the air conditioner thoroughly.***



Solving Common Problems

Before contacting the after-sales service, perform the following simple checks. They may save you the time and expense of an unnecessary call.

Problem	Explanation/Solution
The air conditioner does not operate at all	◆ Check that the breaker used for the air conditioner is switched on. ◆ Check that the indoor unit is turned on; if necessary press the ⏻ (On/Off) button on the remote control. ◆ Check whether the Timer indicator on the indoor unit is switched on. If so: - Wait until the switch-on time is reached and the air conditioner starts up automatically. - Cancel the Timer (see page 15 for further details)
The air conditioner does not operate with the remote control	◆ Check that there are no obstacles between you and the indoor unit. ◆ Check the remote control batteries. ◆ Check that you are close enough to the indoor unit (7 metres /yards or less).
No beep is heard when you press the ⏻ (On/Off) button on the remote control	◆ Check that you are pointing the remote control at the remote control sensor of the indoor unit. ◆ Replace the remote control batteries if necessary.
The air conditioner does not cool or heat	◆ Check that the correct operating mode has been selected (Cool, Auto, Heat). ◆ The room temperature may be too low or too high. ◆ Dust may be blocking the air filter guard; refer to page 19 for cleaning instructions. ◆ Check that there is no obstacle in front of the outdoor unit.
The fan speed does not change when you press the button	◆ Check that the operating mode is set to Cool, Heat or Fan ; in the Auto, Turbo, Long and Dry mode, the fan speed is controlled automatically.
The air flow direction does not change when you press the or button	◆ Check that the air conditioner has been switched on; if necessary, press the ⏻ (On/Off) button on the remote control.
The Timer is not correctly triggered	◆ Check that the timer has been programmed correctly; see page 15.
Odour is permeated in the room during air conditioning	◆ Air the room.
Smoke is generated from the outdoor unit.	◆ It may not be a fire but it can be a steam generated by the defrost operation from outdoor heat exchanger during Heat mode in winter.

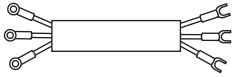
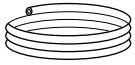
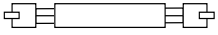
Technical Specifications

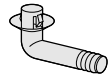
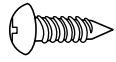
Model	Power Supply
AP50Q1C Series	3N~, 380V, 50Hz
AP55Q1C Series AP55Q1D Series	3~, 220V, 60Hz

CAUTION

- ***Be sure to read the manual carefully to ensure sufficient realization of the excellent performance of the unit.***
- ***Be sure to drill a hole in the wall necessary for installation before attempting to install the unit.***
- ***After completion of installation, be sure to perform a test operation of the unit to check for any problem, and then deliver the unit to the customer if the test results are acceptable.***
- ***After completion of test operation, hand over the manual and warranty card to the customer.***
- ***As the installation work requires special skill, be sure to request a qualified dealer to take care of the installation of your unit; the user should not attempt to install his/her unit by himself/herself.***
- ***Do not attach any electric heating device or electric heater to the unit. Do not attempt to disassemble or modify the unit by yourself. (It may cause machine trouble, electric shock or fire.)***

Accessory Parts List

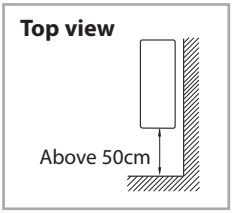
No.	Part Name	Remarks
1	Drain hose	Piping box
2	Connecting pipe ø9.52mm (3/8 inch)	
3	Connecting pipe ø19.05mm (3/4 inch)	
4	Connection wiring (3 strand) 	
5	Insulation for piping 	
6	Finishing tape	
7	Wire of sensor (2 strand) 	

No.	Part Name	Remarks
8	Drain plug 	Piping box
9	Cable tie	
10	Putty	
11	Pipe band	
12	Cover hole	
13	Screw 	

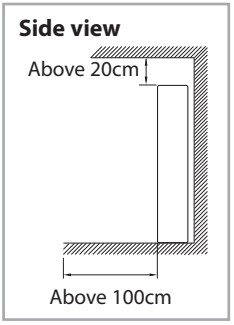
✳ ***The type and quantity may differ depending on the specifications.***

Selection of Installation Place

Indoor Unit



- Install the unit at a place close to the wall facing the outside as it is necessary to perform piping connection with the outdoor unit.
  - It is effective to install the unit at a window side to ensure uniform distribution of indoor temperature.
- Install the unit at a place where there is no obstacle against the wind around the air inlet and air outlet.
- Install the unit horizontally at a stable, rigid place.
  (When installing the unit at a place subjected to oscillation, noise may occur.)
- Avoid a place near the door which is frequented by people.
- Avoid a place subject to direct sunlight.



Outdoor Unit

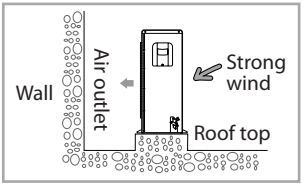
CAUTION

- ***Do not install the outdoor unit on a wood palette.***
- ***Fix the outdoor unit completely to the base surface with anchor bolts.***
- ***The manufacturer is not responsible for the damage occurred by not keeping standard of the installation.***

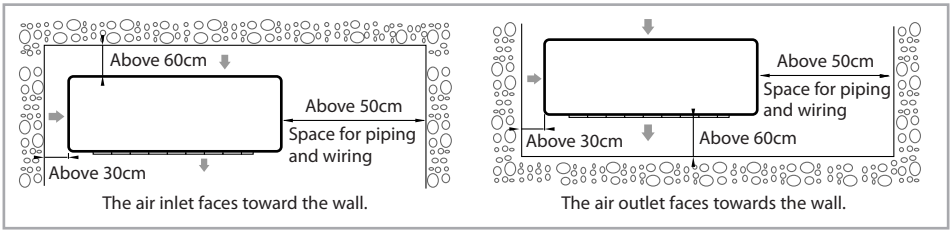
- A place free from the risk of combustible gas leakage.
- A place which can bear the weight of the unit.
- A place which can bear the fixing strength of the outdoor unit.
- Avoid a place subject to oil (including machine oil).
- Avoid a saline place.
- Avoid a place subject to sulfide gas (hot spring zone).
  (When installing the unit at such special environmental conditions, it may cause machine trouble. When it is unavoidable to use such places, It requires special maintenance.)
- A place where the discharge air and noise of the outdoor unit do not disturb the neighborhood.
  (Take special care not to cause any inconvenience to your neighbors when installing the unit on the borderline with your neighborhood.)
- A place where strong wind does not head against the air outlet of the outdoor unit. (If a strong wind heads directly against the air outlet at the time of cooling operation, a safety device can be operated.)
- Do not install the outdoor unit at an unstable place such as outer wall of an apartment or building. The outdoor unit may fall down, causing severe personal or property damage or loss.

❊ If there is any unavoidable reason to install the unit at such a place, take the following measures against the wind;

1. When installing the unit at a roadside concentrated with buildings, install it parallel with the road.
2. Install the unit so that the air outlet faces toward the wall at a place such as rooftop, which may be subjected to strong wind.



- The outdoor unit should be installed in accordance with the service space.



Electrical Work

The electrical work should be performed by a specialist qualified for the work.

- ◆ Use the three phase power supply, and be sure to install the sub power distribution board for exclusive use with the unit(separately purchased by the user).
- ❊ Do not connect multiple plugs to an outlet at once because it can cause a drop in voltage, resulting in poor performance of the automatic control circuit.
- ◆ Be sure to install circuit breaker (Extra purchased by the user).
- ◆ Be sure to connect the grounding wire.
- ◆ If the terminal is loose, fire may occur by arc.
  If the terminal is connected too firmly, the terminal may be damaged.

Screw	Tightening torque (kgf·cm)
M3	5.0~6.0
M3.5	8.0~10.0
M4	12.0~15.0
M5	20.0~25.0
M6	25.0~30.0

Electric power specification

MODEL		AP50Q1C Series	AP55Q1C/AP55Q1D Series
Power		3N~, 380V, 50Hz	3~, 220V, 60Hz
Ampere of breaker		50 A	50 A
Knife switch	**Switch**	30 A	30 A
	Fuse	30 A	30 A
Size of grounding wire		2.0mm^2	2.0mm^2
Min. size of electric wires from/ to the indoor/outdoor unit		0.75mm^2	0.75mm^2
Size of electric input wires		5.5/3.5mm^2	5.5/3.5mm^2

CAUTION

- ◆ ***Be sure to use the wires, and switches or fuses of power distribution board are qualified and fulfill the specification.***
- ◆ ***Be sure to install knife switch or circuit breaker on the power distribution board.***
- ◆ ***The electrical and grounding work should be performed as per " technical specifications of electrical facilities " and " specifications of internal wiring ".***
- ◆ ***Be sure to connect the main electrical input wires with bolted connectors using compressed terminal.***

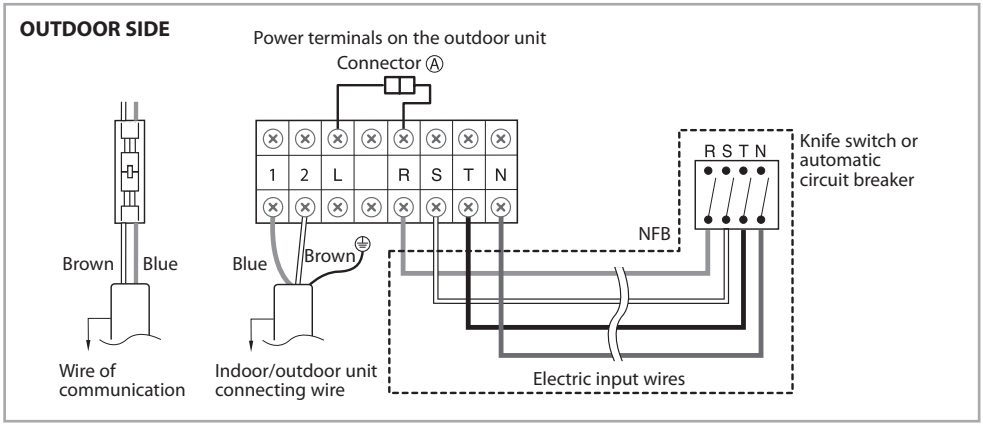
AP50Q1C Series

When connecting 3Phase 4wires 380V AC

When using NFB (No Fuse Breaker)

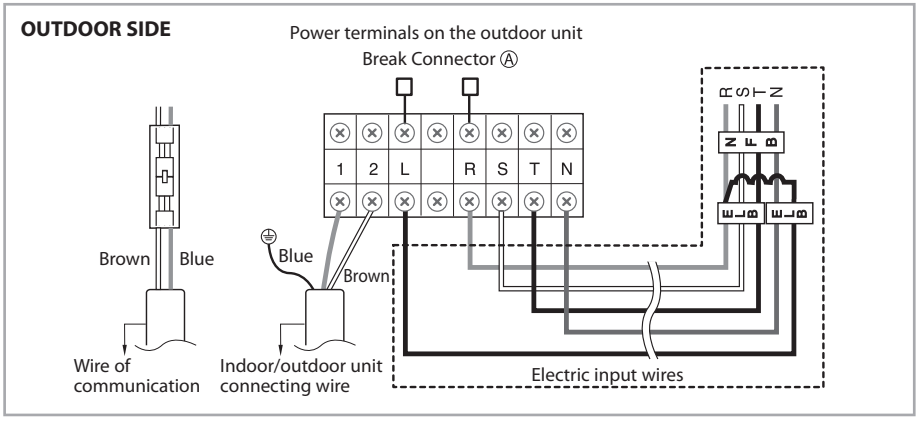
❉ The outdoor unit circuit is shipped based on the NFB power source wiring.

1. Remove the cover of electric box on side panel of the outdoor unit.
2. Connect the electric input wires (R,S,T,N) to each terminal (R,S,T,N) of the electric box on the outdoor unit respectively. (Input wires are purchased by the user separately.)
3. Connect the electric wires to each terminal on the indoor and outdoor unit respectively.



When using ELB (Earth Leakage Circuit Breaker)

1. Remove the cover of electric box on side panel of the outdoor unit.
2. Disconnect the connector A(R-L connection) from the outdoor unit.
3. Connect the electric input wires(R,S,T) to each terminal(R,S,T) and input wires(N,L) to each terminal(N,L) of the electric box on the outdoor unit respectively. (Input wires are purchased by the user separately.)
4. Connect the electric wires to each terminal on the indoor and outdoor unit respectively.

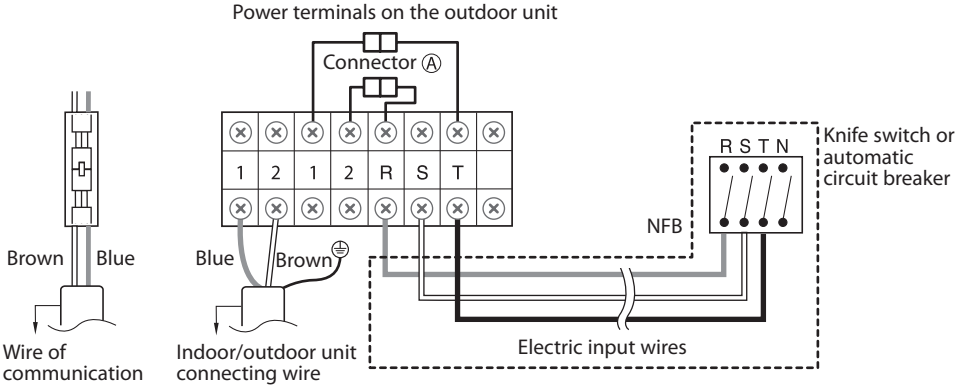


AP55Q1C/AP55Q1D Series

When connecting 3Phase 3wires 220V AC

1. Remove the cover of electric box on side panel of the outdoor unit.
2. Connect the electric input wires(R, S, T) to each terminal(R, S, T) of the electric box on the outdoor unit respectively. (Input wires are purchased by the user separately.)
3. Connect the electric wires to each terminal on the indoor and outdoor unit respectively.

OUTDOOR SIDE



Installation Procedures

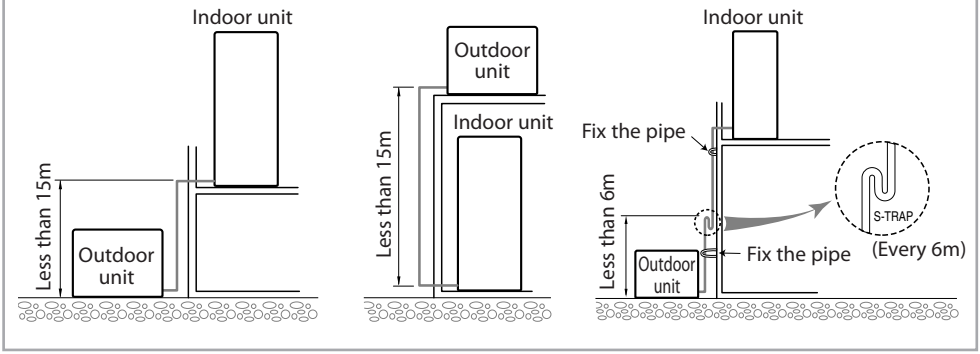
1. Open the front panel, and remove the flare nut.
2. Bend the connection pipe to an appropriate length using the spring bender depending upon the installation place.
   - Allowable pipe length : Maximum 25m
   - Allowable pipe drop distance : Maximum 15m
   - Make no more than ten bending points on the pipe

   ❊ When the pipe length is in excess of the standard pipe length of 5m, add the refrigerant (R22) of 75g(AP50Q1C Series) / 80g(AP55Q1C/AP55Q1D Series) for each additional 1m.

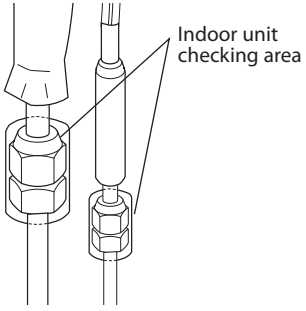
   ❊ Additional Refrigerant
   Example:15m pipe length, additional refrigerant to be charged is
   (15m-5m)X75g/m=750g(AP50Q1C Series), (15m-5m)X80g/m=800g(AP55Q1C/AP55Q1D Series)

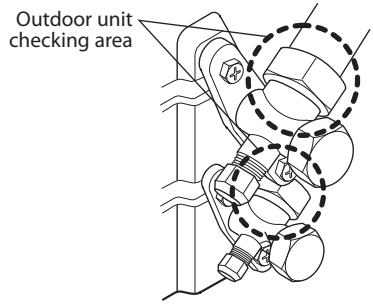
CAUTION

If the pipe is lengthened, the performance of the unit is degraded, and the service life is shortened. Therefore, the pipe length should be as short as possible (less than 25m).



3. Install the high pressure pipe to the heat exchanger liquid pipe, and the low pressure pipe to the heat exchanger gas pipe respectively using the flare nut, taking care not to cause any leakage of refrigerant.
4. Be sure to insulate the pipe with appropriate insulation material.
5. Insert the drain hose into the drain pipe, and connect them by tying them to the cable tie to prevent any water leakage.
6. After completion of the installation, check the connecting area for any gas leakage.
7. Wind a finish tape when the wiring of the refrigerant pipe, the unit, and the drain piping are completed.





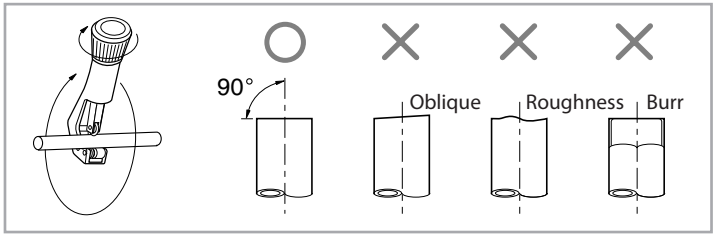
Connection of Refrigerant Piping

WARNING

When installing, make sure there is no leakage. When recovering the refrigerant, ground the compressor first before removing the connection pipe. If the refrigerant pipe is not properly connected and the compressor works with the service valve open, the pipe inhales the air and it makes the pressure inside of the refrigerant cycle abnormally high. It may cause explosion and injury.

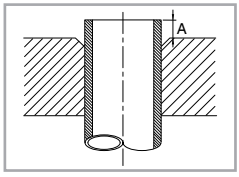
Flare Processing

1. Cut the pipe using the pipe cutter.



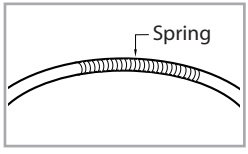
2. Insert the flare nut into the pipe, and then perform the flare processing.

Outer Diameter	A(mm)
9.52mm	1.8
19.05mm	2.2



Pipe Bending

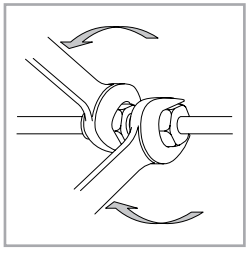
1. Perform bending of the pipe using the bender which has a specified bending radius.
2. Be sure to take full care to perform bending of the pipe successfully at one time. Bending and unbending the pipe more than twice makes the bending work increasingly difficult.
3. You may use the spring inserted into the gas pipe instead of the bender to bend the pipe.
4. When you bend the pipe using the spring, hold the pipe with both hands to prevent any distortion, and secure a minimum bending radius of more than 100mm.



Tightening of Connection Parts

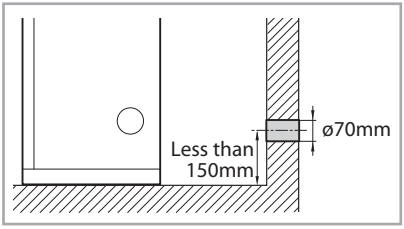
◆ Align the center of the connection piping, and tighten the flare nut by turning it with hand. Then tighten it again using the torque wrench in the direction as shown in the figure.

Outer Diameter	Torque (kgf•cm)	Remarks
9.52mm	250~280	-
19.05mm	990~1210	-



Drilling a Hole in the Wall

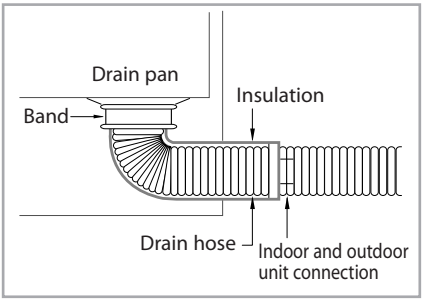
- Drill a hole of 70mm in diameter to the outside.
- The drilling should be done at a distance of less than 150mm from the floor facing the indoor unit.



Drain Hose

- Extend the drain hose to the drain hose connected to the drain pan, and fix it with the tape or a cable-tie to prevent separation. Then make a covering of it so that water cannot flow outwardly.

Piping Material	Vinyl Chloride (Outer diameter ø16mm)
Insulator	Foamed Polyethylene

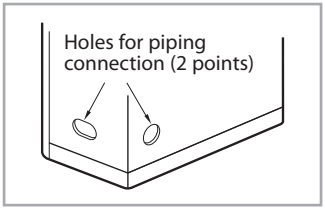


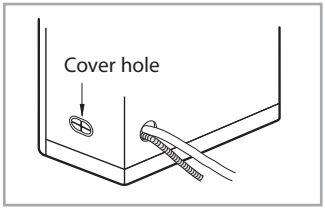
CAUTION

1. ***As the draining is of natural drain type, make the drain hose direct downward.***
2. ***If there is any foreign substance in the drain plate, it may clog the drain pipe. Therefore, be sure to remove the foreign substance inside after installation.***
3. ***After completion of installation, be sure to pour water into the drain pan, and then check the draining condition.(There is no problem in draining when the draining is completed within 20 seconds.)***

Connecting the Pipe

- The piping of this unit can be connected to the right, left, and rear side.
  When you hit the area for piping connection slightly with a hammer, a hole is made.
- After connecting the piping and drain hose, insert the rubber cap as shown in the figure.





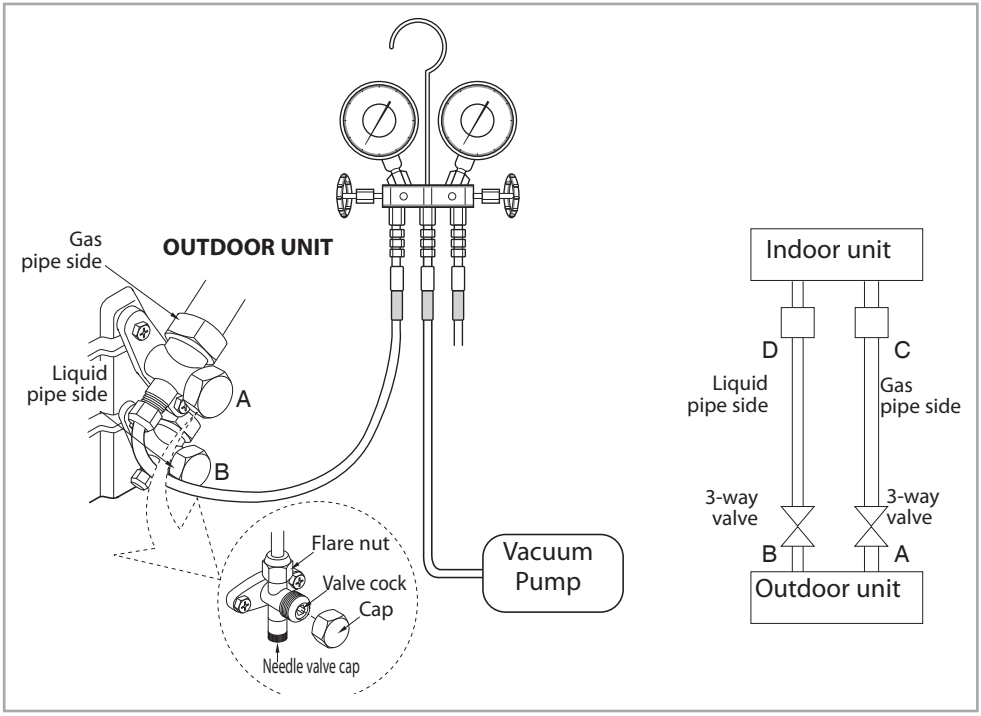
❊ The shape of hole may vary with the models.

Air Purge

❉ Be sure that all valve cocks are closed.

◆ The air in the indoor unit and in the pipe must be purged. If air remains in the refrigeration pipes, it will affect the compressor, reduce cooling capacity and could lead to a malfunction.
Use Vacuum Pump as shown at the figure.

1. Connect each assembly pipe to the appropriate valve on the outdoor unit and tighten the flare nut.
2. Connect the charging hose of low pressure side of manifold gauge to the packed valve having a service port as shown at the figure.
3. Open the valve of the low pressure side of manifold gauge counter-clockwise.
4. Purge the air from the system using vacuum pump for about 30 minutes.
   - Close the valve of the low pressure side of manifold gauge clockwise.
   - Make sure that pressure gauge show -0.1MPa(-76cmHg) after about 30 minutes.
   - This procedure is very important in order to avoid gas leak.
   - Turn off the vacuum pump.
   - Remove the hose of the low pressure side of manifold gauge.
5. Set valve cork of both liquid side and gas side of packed valve to the open position.
6. Mount the valve stem nuts and the service port cap to the valve, and tighten them at the torque of 183kgf•cm with a torque wrench.
7. Check for gas leakage.
   - At this time, especially check for gas leakage from the 3-way valve's stem nuts, and from the service port cap.



Refrigerant Charging

Air purge(at the time of new installation only)

↓

Close the gas pipe side valve by turning it clockwise.
Connect the pressure gauge to the low pressure side service valve, and then open the gas pipe side valve again.

↓

Connect it to the refrigerant filling tank.

↓

Start cooling operation.

↓

Check the pressure of the pressure gauge.
Check whether the low pressure side is within the range of 4.5~5.6kg/cm^{2}G
(outside temperature 35°C).

↓

Open the tank and refill the refrigerant until arriving at the proper pressure.
(Refill the refrigerant slowly checking the pressure.)

↓

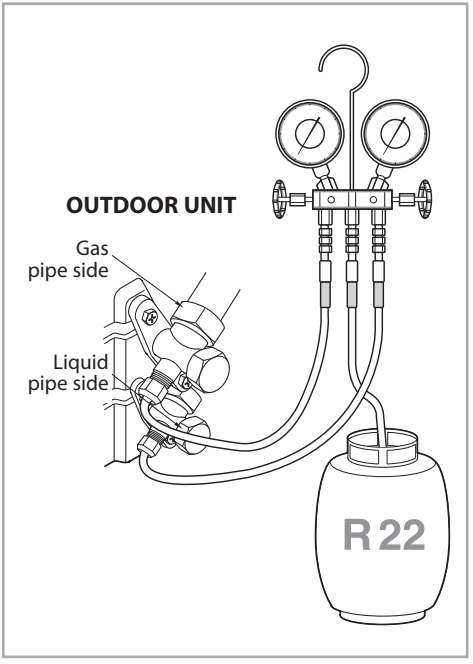
Stop operation.

↓

Close the gas pipe side valve, and loosen the pressure gauge connected.
Then open the gas pipe side valve again.

↓

Tighten the cap of each valve using a specified tool.



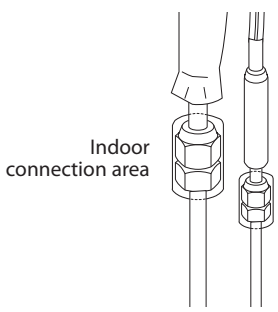
CAUTION

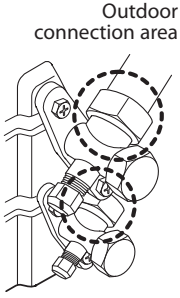
- ***Always use R22 refrigerant to avoid damage of the unit or an explosion.***
- ***Must keep the quantity of refrigerant by using a balance. Do not use a manometer or not depend on your experiences.***

Check

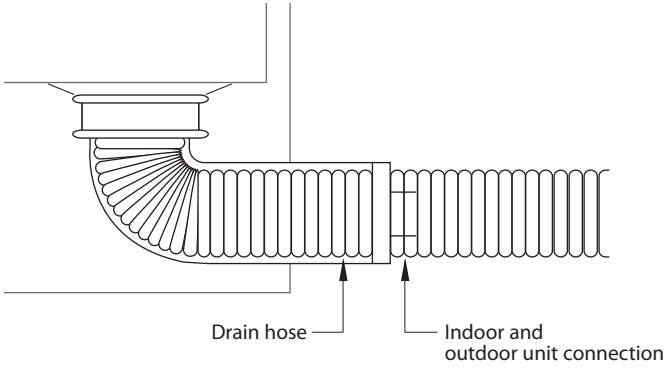
◆ Be sure to check the following again after completion of installation.

1. Check the piping connection area for any gas leakage.

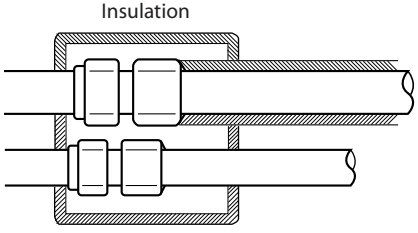




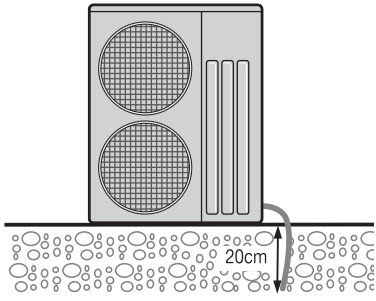
2. Is the drain hose properly connected?



3. Is the insulation of the piping in good condition?



4. Is grounding properly made?



Test Operation

◆ After checking, read the manual carefully, and perform a test operation.
Then deliver the unit to the customer.
(When delivering the unit, be sure to read carefully and follow the contents of the manual.)

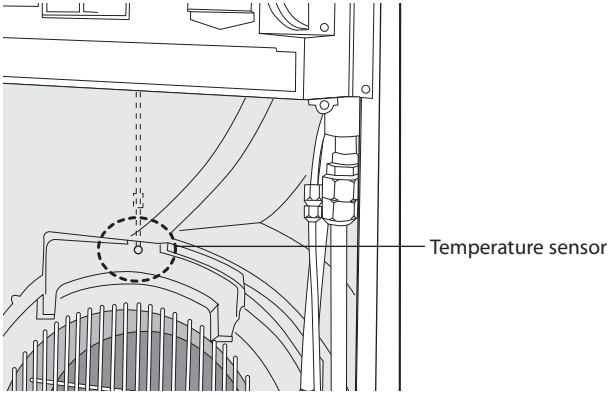
⚠ CAUTION

1. Be sure to check whether the service valve is opened before attempting to perform the test operation.

2. Never attempt to start test operation by force pressing the electronic contactor as it is very dangerous.
(This is very dangerous as the protective device does not work.)

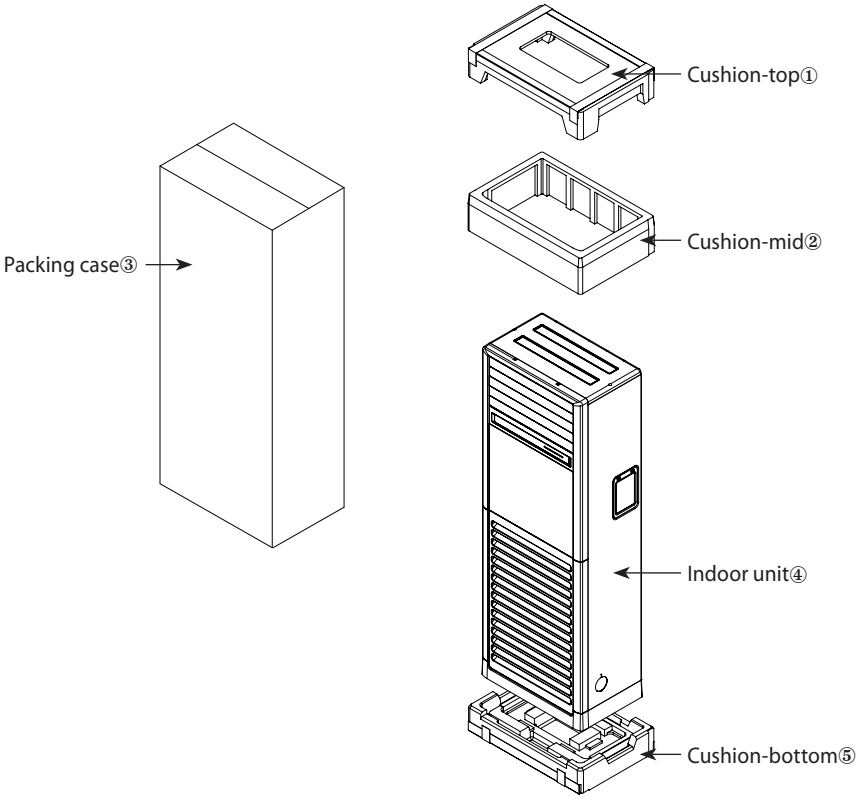
3. Be sure to perform the test operation after installation. It is easy to start the test operation in winter if you increase the sensor temperature to 23°C ~ 25°C by holding the indoor temperature sensor. (Cooling operation)

❊ ***When the outdoor temperature is below zero, do not test operation for more than 3 minutes. Otherwise, the compressor will be damaged.***



Packing and Unpacking Guide

Indoor unit



◆ Packing the unit as below procedure

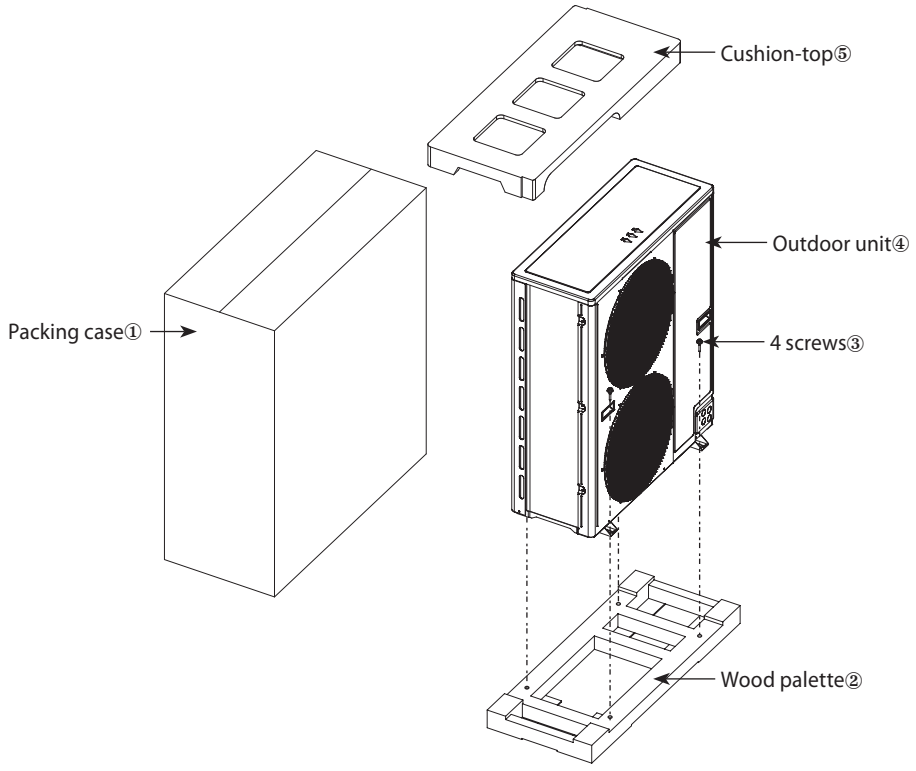
1. Put the indoor unit④ onto the cushion-bottom⑤.
2. Assemble cushion-mid② of indoor unit④.
3. Put the cushion-top① onto the indoor unit④.
4. Put the packing case③ from the top of set.
5. Seal the packing case③.

◆ Unpacking the unit as below procedure

1. Take out the packing case③ from the set.
2. Take out the cushion-top①.
3. Take out the cushion-mid②.
4. Move the set from the cushion-bottom⑤.

Packing and Unpacking Guide (Continued)

Outdoor unit



◆ Packing the unit as below procedure

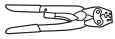
1. Fix the outdoor unit④ and the wood palette② by 4 screws③.
2. Put the cushion-top⑤ onto the outdoor unit④.
3. Put the packing case① from the top of set.
4. Seal the packing case①.

◆ Unpacking the unit as below procedure

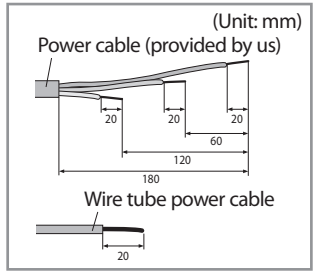
1. Take out the packing case① from the set.
2. Take out the cushion-top⑤.
3. Unscrew 4 screws③ from the wood palette② and then move the set.

How to connect your extended power cables

※ Items to prepare
(compressor and insulation tape should be prepared by an installation technician.)

Tools	Crimping plier	Connection sleeve (mm)	Insulation tape	Contraction tube (mm)
Spec	MH-14	20xØ7.0(HxOD)	Width 18mm	50xØ8.0(LxOD)
Shape				

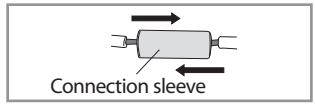
1. As shown in the figure, peel off the shields from the rubber/wire of the power cable.
   - Peel off 20 mm of the wire shields of the tube installed already.



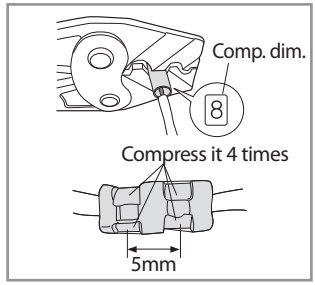
CAUTION

After peeling off the tube wire, you must insert a contraction tube.

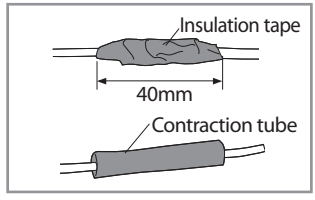
2. Insert both sides of core wire of the power cable into the connection sleeve.



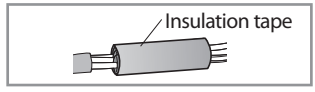
3. Using a compressor, compress the two points and flip it over and compress another two points in the same location.
   - The compression dimension should be 8.0.
   - After compressing it, pull both sides of the wire to make sure it is firmly pressed.



4. Wrap it with the insulation tape twice and position your contraction tube in the middle of the insulation tape.
5. Apply heat to the contraction tube to contract it.

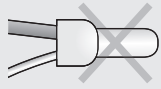


6. After tube contraction work is completed, wrap it with the insulation tape to finish.



WARNING

In case of extending the electric wire, please DO NOT use a round-shaped pressing socket.
- Incomplete wire connections can cause electric shock or a fire



QUESTIONS OR COMMENTS?

COUNTRY	CALL	OR VISIT US ONLINE AT
IRAN	021-8255	www.samsung.com www.samservice.com
OMAN	800-SAMSUNG(726-7864)	www.samsung.com
KUWAIT	183-2255	www.samsung.com
BAHRAIN	8000-4726	www.samsung.com
EGYPT	08000-726786	www.samsung.com
JORDAN	800-22273	www.samsung.com
MOROCCO	080 100 2255	www.samsung.com
SAUDI ARABIA	9200-21230	www.samsung.com
TURKEY	444 77 11	www.samsung.com
U.A.E	800-SAMSUNG (726-7864)	www.samsung.com

Planet First 100% Recycled Paper